REMARKS

The restriction requirement imposed in the present application has now been made final. As a result, Claims 33 to 65, directed to a method of stabilizing a polyorganosiloxane composition and a light bulb, have been withdrawn from consideration from this application. All the remaining claims, Claims 1-32, examined on the merits in this application, are directed to a stabilized polyorganosiloxane composition. As such, the title of the application has been amended to reflect the subject matter of the claims currently in this application.

All the claims currently in this application have been rejected on substantive grounds. Applicants have considered these substantive grounds of rejection and respectfully submit that all the claims currently in this application are patentable thereover.

Two substantive grounds of rejection are imposed in the outstanding Official Action, albeit specific grounds are imposed for the rejection of specific claims. Specifically, Claims 1-17 and 20-32 stand rejected, under 35 U.S.C. §103(a), as being unpatentable over U.S. Patent 5,013,800 to Inoue taken in view of U.S. Patent 5,350,786 to Costanzi et al. The remaining two claims, Claims 18 and 19, stand rejected, under 35 U.S.C. §103(a), as being unpatentable over the principal and secondary references taken in further view of U.S. Patent 5,034,061 to Maguire et al.

The thrust of the first substantive ground of rejection is that Inoue discloses a composition which includes a polyorganosiloxane wherein the polyorganosiloxane is free from alternating cyclic hydrocarbon residues. The composition, as emphasized in the Official Action, optionally includes other additives which include ultraviolet absorbers and aging retarders.

The notable absence in the organopolysiloxane-based coating composition of Inoue of any hindered amine light stabilizer (HALS) is emphasized by the citation of the secondary Costanzi et al. patent. Costanzi et al. discloses the addition of hindered amine light stabilizers to an alkenyl-containing compound. The Official Action thus concludes that it would be obvious to one of ordinary skill in the art to include a hindered amine light stabilizer, as taught by Costanzi et al., in the composition of Inoue. The motivation for this substitution, the Official Action avers, is because Costanzi et al. teaches that the addition of a hindered amine light stabilizer to an alkenyl-containing composition reduces aging and absorbs ultraviolet radiation, resulting in a higher quality composition.

It is the absence of any motivation to utilize, in a polysiloxane-containing composition, a hindered amine light stabilizer that prompts applicants to hold that it would not be obvious to one skilled in the art to combine the two references.

Those skilled in the art are aware that polyolefins, e.g. polyethylene, polypropylene and the like, degrade by oxidation. Thus, it is appropriate that a HALS, which is known to prevent oxidative degradation, be used in the processing of such polymers. On the other hand, polyorganosiloxanes do not degrade by oxidation. Attention is directed to Paragraph 0007 of the instant specification wherein the basis of degradation of polysiloxanes is set forth. As those skilled in the art are aware, degradation of polysiloxanes occur by a non-oxidative process, a process denoted as cycloreversion. As stated therein, cycloreversion is a non-oxidative process. Thus, it is highly surprising, and unpredictable from the teaching of Costanzi et al., that a HALS, which is an antioxidant, is effective in the stabilization of polyorganosiloxanes.

The surprising fact that the class of polymers stabilized by HALS, e.g. polyolefins, can be extended to the totally structurally different class of polyorganosiloxanes polymers is theoretically explained in Paragraph 0008 of the present specification. That portion of the specification explains applicants discovery that both cycloreversion and oxidation of polyorganosiloxanes occur simultaneously at elevated temperature. Insofar as a principal use of the composition of the present application is as a bulb coating, the use of a HALS presents unique advantages that allow the exploitation of HALS as stabilizers of organopolysiloxane compositions for the first time. That is, as indicated in Paragraph 0008, temperatures in a light bulb are elevated, indeed they are greater than 180°C. In addition, the interior of a light bulb holds an oxygen-containing atmosphere. Thus, the utilization of a HALS in an organopolysiloxane composition presents unique advantages not disclosed or suggested by the use of such stabilizers in polyolefins as taught by Costanzi et al.

It is also noted that the present composition represents an important advance in the development of light bulbs. As indicated in Paragraph 0002, a globe of a light bulb is thin and frail and thus vulnerable to breakage upon the slightest impact. This well known property of light bulbs is furthermore made more important by recent developments in light bulb design wherein an inner filament tube is often included under positive pressure. As such, the danger of the filament rupture is significantly increased. Therefore, for safety purposes, it is important that the outer globe of a light bulb, which, as stated above, is thin and frail, be strengthened.

Those skilled in the art are aware that polyorganosiloxane coatings represent an excellent means of strengthening light bulb bulbs. Polysiloxane coatings provide high impact strength, while, critical to use in light bulb applications, being transparent and colorless. In

addition, given the relative cheap price of light bulbs, polysiloxane coatings are cheap. Unfortunately, however, polysiloxanes were, until the present invention, not available for use in this application. This was so because they were unstable above 180°C. Light bulbs operate at a temperature in excess of 180°C.

This is not to say that stabilizers for polysiloxanes are not available. Those skilled in the art are aware that metal-containing compounds, such as iron oxide and copper-containing compounds, are employed as polysiloxane thermal stabilizers. Unfortunately, metal-containing thermal stabilizing compounds, although effective in preventing thermal degradation, impart opacity and/or color to the bulb which prevents their usage.

The above remarks are provided to emphasize the significant advance in the art provided by the stabilized polyorganosiloxane composition of Claims 1 to 32 of the present application. There is nothing in the teaching of Inoue, which discloses organopolysiloxane-based coatings free from alternating cyclic hydrocarbon resides, which suggest the use of a HALS as a stabilizer. Indeed, the employment of the coatings of Inoue in room temperature curable coating compositions emphasizes the lack of motivation to employ products produced in accordance with Inoue in high temperature environments.

At ambient temperature a HALS is ineffective as a stabilizer of polyorganosiloxane compositions. At ambient temperature, the relatively polar bonds of the polyorganosiloxane, which containing oxygen bonds, do not degrade by an oxidative pathway as do polyolefins, which are apolar, containing only carbon to carbon bonds. Instead, they degrade, as stated above, by cycloreversion. Thus, the combined teaching of Inoue, directed to room temperature use of polyorganosiloxanes, and Costanzi et al. produce a totally ineffective stabilizer product. That is, HALS is totally ineffective as a stabilizer at ambient temperature.

As such, the combined teaching of the applied references does not present a prima facie case of obviousness of any of the claims examined on the merits, Claims 1-32.

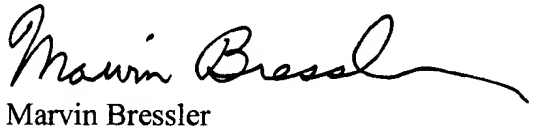
The above remarks establish the patentable nature of all the claims currently in this application over the rejection of record. However, applicants also rely on the admitted deficiencies in the teachings of the applied references for specific limitations included in the dependent claims. For example, Claims 3-5, 7-9 and 20-22, wherein specific polysiloxane units are recited to be present in specific molar concentrations, only further emphasize the patentability of these claims. In addition, many of the remaining claims are similarly distinguished over Inoue by their recitation of specific amounts, which are admitted in the outstanding Official Action to not be disclosed by the principal Inoue reference.

The absence of specific limitations in the Inoue disclosure, however, should not overshadow the landmark advance, defined by the composition claims of the present application, over the teachings of the prior art, as exemplified by Inoue. The failure of the Official Action to include any prior art which discloses, suggests or even hints at the use of a HALS as a stabilizer for a polyorganosiloxane-containing composition emphasizes this advance in the art. Therefore, applicants are entitled to the broad scope of coverage afforded by present Claim 1. Applicants respectfully urge that the outstanding substantive grounds of rejection, based on the combined teaching of Inoue taken in view of Costanzi et al., and in the case of Claims 18 and 19, in further view of Mcguire et al., be rescinded.

The above amendment and remarks establish the patentable nature of all the claims currently in this application. Notice of Allowance and passage to issue of these claims,

Claims 1-32, is therefore respectfully solicited.

Respectfully submitted,



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APPENDIX

RENDITION OF AMENDMENT SHOWING CHANGES MADE

IN THE TITLE:

(Amended): STABILIZED POLYORGANOSILOXANE COMPOSITION[, METHOD AND COATED BULB]